





**Process for the production of omega -amino-1-hydroxyalkylidene-1,1-bisphosphonic acid****Publication number:** DE3016289**Publication date:** 1981-10-29**Inventor:** BLUM HELMUT (DE); WORMS KARL-HEINZ DIPL  
CHEM DR (DE)**Applicant:** HENKEL KGAA (DE)**Classification:****- international:** C02F1/68; C02F5/14; C07F9/38; C07F9/40; C02F1/68;  
C02F5/10; C07F9/00; (IPC1-7): C07F9/38**- european:** C02F1/68K; C02F5/14; C07F9/38A6U**Application number:** DE19803016289 19800428**Priority number(s):** DE19803016289 19800428**Also published as:** EP0039033 (A1)  
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A process for the preparation of a omega -amino-1-hydroxyalkylidene-1,1-biphosphonic acid of the formula wherein n is an integer from 3 to 5, consisting essentially of the steps of reacting an aminocarboxylic acid of the formula  $\text{NH}_2\text{-CH}_2\text{-(CH}_2\text{)}_m\text{-COOH}$  wherein m is an integer from 2 to 4, with a phosphonating reactant selected from the group consisting of (a) a mixture of phosphorous acid and  $\text{PCl}_3$ , (b) a mixture of phosphorous acid and  $\text{PCl}_5$ , and (c) a mixture of phosphorous acid and  $\text{POCl}_3$ , hydrolyzing the reaction mixture with a strong acid which does not oxidize aminophosphonic acids, and recovering said omega -amino-1-hydroxyalkylidene-1,1-bisphosphonic acid.

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